

## Genus *Scythropiodes* Matsumura in China and Korea (Lepidoptera, Lecithoceridae), with Description of Seven New species

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**Abstract** Fourteen species of the genus *Scythropiodes* Matsumura from China and Korea are recognized. Of them, seven species <*S. oncinus* sp. nov., *S. elasmatus* sp. nov., *S. hamatellus* sp. nov., *S. julianae* sp. nov., *S. barbellatus* sp. nov., *S. gnophus* sp. nov., and *S. triangulus* sp. nov.> are described as new to science. *Odites velipotens* Meyrick is transferred to *Scythropiodes* Matsumura. Three species are synonymized <*S. choricopa* Meyrick as a junior synonym of *approximans* Caradja, *S. plocmopa* Meyrick as of *issikii* (Takahashi), and *S. xenophaea* Meyrick as of *malivora* Meyrick>. *Castaena crenata* S. et Z. and *Lagerstroemia indica* L. are newly known as host plants of *S. malivora*.

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**Key words** Systematics, Lepidoptera, Gelechoidea, Lecithoceridae, *Scythropiodes*, *Odites*

### INTRODUCTION

The genus *Scythropiodes* Matsumura was erected by monotypy, based on *S. seriatopunctata* (Matsumura, 1931), originally placed in the family Yponomeutidae. However, Inoue (1954) included it in the Gelechiidae, treated it as a junior synonym of *Odites* Walsingham, 1891. Moriuti (1982) placed it in the Lecithoceridae, synonymizing *seriatopunctata* Matsumura with *leucostola* Meyrick. Lvovsky (1996) separated the genus *Scythropiodes* Matsumura from the genus *Odites*, and combined 16 previously known species of *Odites* into *Scythropiodes*, with illustration of the venation of both wings and male genitalia of the type species of *Odites natalensis* Walsingham. The genus *Odites*-group, including *Scythropiodes*, comprises about 150 species in the world. It has been commonly placed in the family Lecithoceridae, but sometimes placed previously in the Xyloryctidae with other related genera. Hodges (1978) placed Lecithocerinae in the family Gelechiidae, stating "Lecithocerinae differ from other Gelechiidae mainly in the uncus-gnathos structure of the male genitalia, but this difference is no greater than the differences in the male genitalia among the other subfamily." Moriuti (1982) followed Hodges's opinion, and placed five Japanese species of *Odites* Walsingham <*issikii* (Takahashi), *leucostola* (Meyrick), *lividula* Meyrick, *xenophaea* Meyrick, and *venusta* Moriuti> in Lecithoceridae based on their

characteristic shape of gnathos. However, all these species of *Odites* actually belong to *Scythropiodes*, as proposed by Lvovsky (1996). Lvovsky also referred that the group was differentiated from the common members of Lecithoceridae proposed by Gozmany (1978), due to the shorter antennae, and further suggested that a new subfamily for them should be established in the family Lecithoceridae. Gozmany (1978) suggested that Lecithoceridae could be differentiated by its apomorphic characters: long antenna and downturned gnathos. He divided the family into three different subfamilies: Ceuthomadarinae, Lecithocerinae, and Torodinae, but he did not include *Odites*-group in the family. Hodges (*in preparation*) recently proposed to elevate the subfamily to the family Lecithoceridae, based on following apomorphies: gnathos fused to tegumen, mesial region downturned and laterally compressed, from the result of an analysis with morphological characters of the family/subfamily-groups of Gelechoidea. He placed the the genus *Odites* in the Lecithoceridae, and separated *Cryptophasa*, *Lichenaula*, and *Xylorycta* in the subfamily Xyloryctinae of Elachistidae. Lvovsky (1996) supported the opinion that the genus *Odites* and its allied genera belong to Lecithoceridae, and proposed a new subfamily Oditinae including two tribes: Oditini (*Odites* Meyrick, *Trichernis* Meyrick, and *Amphitrias* Meyrick) and Scythropioidini (*Scythropiodes* Matsumura, *Rhizosthenes* Meyrick and *Myriopleura* Meyrick).

The wing venation and the gnathos in the male genitalia of the genus *Scythropiodes* agree with those of the Lecithoceridae, but the shorter antenna and the shape of wings more resemble to those of the family Xyloryctidae, as stated by Gozmany (1978). Herein this paper, we followed other recent author's opinions (Moriuti, 1982; Karshort et Razowski, 1996; Lvovsky, 1996; Hodges, *in preparation*) and place the *Scythropiodes* in the family Lecithoceridae rather than Xyloryctidae. Distributional range of the genus includes Russian Far East, China, Korea, Japan, India, Sri-Lanka, and S Africa.

## SYSTEMATICS

### Genus *Scythropiodes* Matsumura, 1931

*Scythropiodes* Matsumura, 1931, 6000 Illustrated Insects of Japan-Empire: 1099.

Type: *Scythropiodes seriatopunctata* Matsumura, 1931.

The types of *Scythropiodes seriatopunctata* Matsumura are deposited in the Entomological Institute, Hokkaido University, Sapporo, Japan. Mr. Sakamaki (*pers. comm.*) recently supplied me the following information: the type species, *seriatopunctata* Matsumura, is undoubtedly a junior synonym of *leucostola* Meyrick, as suggested by Moriuti (1982). The type series consists of 12 specimens, without designating a lectotype <1 ♀, Komaba, Tokyo, Japan, 13/ix/1914, S. Hirayama leg.; 1 ♂, Sapporo, 10/vii/1918, Matsumura; 1 ♂, Meguro, Tokyo, Japan, 22/vii.1920, S. Hirayama leg.; 1 ♂, Sapporo, 16/vii/1918, Matsumura; 1 ♂, Sapporo, 20/vii/1920, Matsumura; 4 ♂, Sapporo, without collecting date, Matsumura; 1 ♀, Sapporo, without collecting date label, Matsumura; 1 ♂, Japan, Kuwayama; 1 ex. (lacking abdomen), Sapporo, Matsumura>. He also kindly sent me the photo of a male syntype, with a male genitalia of a conspecific specimen for comparison (Sapporo, Hokkaido, 23/vii/1996, Y. Sakamaki leg., LEC. 96096), which was collected from the same locality with the types. The genus is closely related to

*Odites*, but can be differentiated from the latter by  $CuA_2$  of the forewing arising far from the lower corner of the cell, and male genitalia with well developed downturned gnathos, which is lacking or reduced in *Odites*.

Gender of the generic name ending in “odes” is masculine [Article 30(b)], but the type species of this genus was named with feminine, “*seriapunctata* Matsumura”. Most of species previously belonged to *Odites* was treated as feminine. According to the upcoming edition of the *International Code of Zoological Nomenclature* (Park & Hodges, 1994: 41), the original spelling of a name is the spelling to be used and gender concord no longer will pertain. In the description of new species, the specific names take suffix as masculine by the ICZN, 3rd ed., Article 30(b).

### Key to species of *Scythropiodes* in China and Korea

1. Forewing ground colour greyish orange or yellowish brown, lacking a row of dark dots along marginal line ..... 2
  - Forewing ground colour creamy white or pale grey, with a row of dark dots along marginal line ..... 8
2. Forewing greyish orange; two discal spots distinctly presented ..... 3
  - Forewing yellowish brown to dark brown; discal spots lacking or indistinct ..... 6
3. Forewing broad, with brown 7-8 spots along termen; valva of male genitalia small, narrowed, not exceeding end of tegumen ..... *triangulus* sp. nov.
  - Forewing moderate, without spots along termen; valva of male genitalia large, elliptical or broadened basally, exceeding end of tegumen ..... 4
4. Forewing with  $CuA_2$  arising from near lower corner of cell; valva of male genitalia elliptical, but not broadened basally; aedeagus simple, straight, shorter than whole body of genitalia ..... *elasmatus* sp. nov.
  - Forewing with  $CuA_2$  arising far from lower angle of cell; valva of male genitalia extremely broadened basally, with digitate cuculus; aedeagus large, longer than whole body of genitalia ..... 5
5. Forewing with  $R_4$  and  $R_5$  stalked near middle; hindwing orange white; aedeagus with simply pointed apically, with a small, lateral denticle ..... *malivora* Meyrick
  - Forewing with  $R_4$  and  $R_5$  stalked beyond 3/4; hindwing greyish white; aedeagus with a bilobed, pointed process apically, a large sharply pointed ventral process and two small denticles preapically ..... *ussuriella* Lvovsky
6. Forewing yellowish brown to brown; cilia pale orange grey ..... *oncinus* sp. nov.
  - Forewing brown to dark brown; cilia white ..... 7
7. Wingspan more than 14 mm; valva with a long, digitate lobe arising from costal 3/4 and bristlelike hairtuft along costa apically ..... *barbellatus* sp. nov.
  - Wingspan less than 13 mm; valva bifurcated into two lobes near apical 1/4 ..... *gnophus* sp. nov.
8. Forewing elongate, relatively narrow, orange white; inner discal spot large; valva narrowed toward apex ..... *issiki* Takahashi
  - Forewing moderate, creamy white or pale grey; inner discal spot small; valva broadened basally, elliptical, with apical process or sharply pointed apex ..... 9

9. Wingspan more than 20 mm ..... *velipotens* Meyrick  
 - Wingspan less than 18 mm ..... 10
10. Forewing ground color creamy white; valva with a digitate process; aedeagus with three strong cornuti ..... *approximans* Caradja  
 - Forewing ground color pale grey; valva with sharply pointed apex or horn-shaped long process apically ..... 11
11. Valva with a deep emargination beyond middle on costa; aedeagus with three strong cornuti ..... *tribula* Wu  
 - Valva without such emargination on costa ..... 12
12. Forewing with  $R_4$  and  $R_5$  stalked beyond  $3/4$ ; aedeagus with a long slender cornuti ..... *leucostola* Meyrick  
 - Forewing with  $R_4$  and  $R_5$  stalked beyond middle; aedeagus with two short, thornlike cornuti ..... *jiulianae* sp. nov.

***Scythropiodes malivora* (Meyrick, 1930)**

(Figs 1, 15-16, 41, 41a)

*Odites malivora* Meyrick, 1930, Exot. Microlep. 3: 555. Type: female, Manchuria, dated 8. 28. no collected year.

*Odites xenophaea* Meyrick, 1931, in Caradja, Bull. Sect. Sci. Acad. roum. 14: 16 (Lectotype: male, Kwanhsien, China, 7. 28. gen. prep. no. 7612/Clarke); Clarke, 1955: 482, pl. 240, figs 4-4c; Okada, 1962: 88, pl. 8, figs 3, 8; pl. 9, fig. 12; pl. 10, figs 30-32; pl. 12, figs 48-50; Moriuti, 1982: part 1: 273, part 2: 211, pl. 12: 21, **syn. nov.**

**Diagnosis.** Wingspan, 23~28mm. This species was described from Manchuria, China, based on a female. According to the original description. it was reared from "rolling leaf of *Pyrus malus*", but the host was erroneously recorded, and it probably is one of *Malus* or *Pyrus* species. In the comparison of the holotype of this species with that of *xenophaea* Meyrick superficially, which are preserved in the Natural History Museum, London, the first author found that they are identical each other. Unfortunately their genitalia was not compared due to the holotype of *malivora* Meyrick missing abdomen. Furthermore all of the Korean specimens which their larvae were reared from *Malus pumila* are quite agree to *xenophaea* Meyrick in the shape of the male genitalia.

**Male genitalia** (Figs 15-16). See Clarke, 1955, pl. 240, figs 4, 4b, 4c, and see also Okada, 1962, pl. 10, figs 30-32.

**Female genitalia** (Figs 41-41a). See also Okada, 1962, pl. 12, figs 48-50.

**Material examined.** [**S. Korea**]- 1 ♀, Suweon, Gyunggi Prov., 12.-VII. 1974 (K.T. Park), gen. slide no. 367/Park; 1 ♂, same locality, 13. VII. 1977 (K.T. Park); 1 ♂, 1 ♀, Mt. Yeogi-san, in campus of RDA, Suweon, 19. VII. 1984 (S.B. Ahn); 2 ♀, same locality, 19. VII. 1986 (S.B. Ahn), gen. slide no. 4161/Park; 1 ♀, same locality, 22. VI. 1984 (S.B. Ahn)- all the above specimens were reared from *Malus pumila*; 1 ♂, locality unknown, 22. VII. 1982 (J.D. Park), reared from *Castanea crenata* S. et Z., gen. slide no. 4162/Park; 1 ♀, Mt. Cheunggye-san, Gyunggi Prov., 12. VIII. 1976 (K.T. Park); 1 ♂,

Biando, 20 km W Gunsan, Jeonbuk Prov., 26. VII. 1980 (K.T. Park); Mt. Gyeryong-san, Chungnam Prov., 8. VIII. 1980 (M.H. Kim); 1 ♀, Namwon, Jeonnam Prov., 15. VII. 1986 (S.B. Ahn), reared from *Lagerstroemia indica* L. (Lythraceae). [N. Korea]- 1 ♂, Pyongyang, Mt Yongak-san, 27. 07. 1982, no. 870 (L. Forro & L. Ronkay), gen. Slide. no. 3136/Lvovsky; 1 ♂, Pyongyang, 5. 07. 1982, no. 733 (L. Forro & L. Ronkay). These specimens were determined by Lvovsky and are deposited in HMNH. [China]- 2 ♂, Mt. Tienmu, Zhejiang, 28. VII. 1972, Academia Sinica; 2 ♂, 1 ♀, Wolong, Sichuan, 30. VI. 1980, and Mt. Bingcheng, 28. VII. 1980, Academia Sinica; 2 ♂, Jinzhou City, Liaoning, VIII. 1970, Academia Sinica.

*Distribution.* Korea, Japan (Honshu, Hiroshima), China (Manchuria), Russian Far East.

*Hosts.* *Malus pumila* Mill; *Castanea crenata* S. et Z. and *Lagerstroemia indica* L. (new record).

### ***Scythropiodes ussuriella* Lvovsky, 1996**

(Figs 2, 17-18)

*Scythropiodes ussuriella* Lvovsky, 1996, Ent. Obozr. 75(3): 650-659. Type: Ussurysk.

*Diagnosis.* Wingspan, 22mm. This species is recently described from Ussuri, Russian Far East. It is hardly distinguishable from *O. malivora* superficially, but can be separated by the more greyish hindwing, and forewing with  $R_4$  and  $R_5$  stalked from near  $3/4$ , whereas from near middle in the latter. Their male genitalic characters are also very similar, but the gnathos less bent downwardly, conjunction of the cucullus less hollowed outwardly in *ussuriella*. Another distinct character is found in the aedeagus: *ussuriella* Lvovsky has a large, sharply pointed ventral process and two small denticles preapically, and bilobed pointed processes apically, whereas that of *malivora* Meyrick lacks the developed ventral processes. Female is unknown.

*Male genitalia.* As shown in the figures 17-18 (see also Lvovsky, 1996: 653, figs 10-11).

*Material examined.* [Korea]- 1 ♂, Seomyun, Yangyang, Gangwon Prov., 30. VI. 1987 (K.T. Park), gen. slide no. 4121/Park.

*Distribution.* Korea (new record), Russian Far East (Ussurysk).

### ***Scythropiodes oncinus* Park & Wu, sp. nov.**

(Figs 7, 19-20, 45a)

*Diagnosis.* Forewing colour pattern of this new species is similar to that of *lividula* Meyrick, but it can be easily separated from all the other known related species by the male genitalia, especially in the shape of aedeagus, and by the unique shape of signa in the female genitalia. Second segment of labial palpus pale orange beyond middle on outer surface, whereas only on apical  $1/4$  in the latter.

*Adult.* Wingspan, 15~17mm. Head orange grey, roughly scaled; frons creamy white. Thorax yellowish brown; Antennae yellowish-brown; scape long; flagellum lacks hairs ventrally. Second segment of labial palpus pale orange beyond middle and yellowish brown at basal half obliquely on outer surface; creamy white on inner surface. Forewing yellowish brown; a row covered with yellowish scales along

costal margin; cilia greyish brown. Hindwing light yellowish white. Tibia and tarsus bearing light yellowish, brown, long hairs above.

*Male genitalia* (Figs 19-20). Gnathos long, with acute apex. Valva elliptical, with a short, digitate median lobe bearing hairs apically, and a long and a short spinelike process forked at base, shorter one about 1/4 of longer one. Transtilla with a pair of short, rounded lateral processes bearing hairs apically. Vinculum, slender. Aedeagus long, stout, with a bifurcated hook-shaped process apically, one longer than the other; cornuti consist of two rows of heavily sclerotized long spines, a series of shorter spine basally, and a bundle of minute spines.

*Female genitalia* (Fig. 45a). Lamella postvaginalis heavily sclerotized, broad. Antrum not sclerotized. Ductus bursae long, membranous, longer than two times of corpus bursae. Corpus bursa ovate; signa double, heavily sclerotized plate with 3-4 strong, different size of denticles along outer margin.

*Type*. Holotype: male, Tianchi Lake, Hainan, China, 10. IV. 1980 (J. Bai), gen. slide no. Wu-88047. Paratypes: 1 ♂, 1 ♀, data as same as holotype., gen. slide no. Wu-89198 (♀). The holotype is housed in IZAS, China and a male paratype in CIS, Korea.

*Distribution*. China.

*Ethymology*. The specific name is derived from Greek, "onkinos", meaning a hook.

### ***Scythropiodes elasmatus* Park & Wu, sp. nov.**

(Figs 3, 21-22)

*Diagnosis*. This species is close to *ussuriella* Lvovsky, but it has no discal spot at middle and can be easily distinguished from the male genitalic character.

*Adult*. Wingspan, 19mm. Head pale orange, with rough scales above. Tegula and thorax greyish orange. Flagellum of antenna shortly ciliated. Second segment of labial palpus more or less slender, brownish orange outwardly except apical 1/4 above middle; 3rd segment slightly shorter, extremely slender. Forewing pale greyish orange, with a large discal spot beyond end of cell; apex obtuse; termen slightly sinuate; R<sub>4</sub> and R<sub>5</sub> stalked beyond middle, CuA<sub>2</sub> arising from near lower corner of cell. Hindwing pale grey. Female is unknown.

*Male genitalia* (Figs 21-22). Valva elliptical, with acute apex; costa with a row of closely adhered brown scales beyond middle; basal process with leaflike basal part, and horn-shaped, heavily sclerotized apical part. Transtilla with a pair of large, semiovate lobes bearing hairs apically. Aedeagus simple, straight, with a large hornlike cornutus and a series of numerous short spines apically.

*Type*. Holotype: male, Mt. Emei, Suichan, China, 22. VI. 1959 (Wang), gen. slide no. Wu-94005. Paratype: ♂, same locality as holotype, 12. VI. 1979. The holotype is housed in IZAS, China and a male paratype in CIS, Korea.

*Distribution*. China.

*Ethymology*. The specific name is derived from Greek, "elasmos", meaning a metal plate.

***Scythropiodes approximans* (Caradja, 1927)**

(Figs 4, 23-24, 24a, 42, 42a)

*Odites approximans* Caradja, 1927, Mem. Sect. St. Acad. Rom. s. III. 4, 8: 393. Type: lectotype, male, Peking (Westberge), Exp., China, Stotzmer, in "Grigore Anmtipa" Museum.

*Odites chopricopa* Meyrick, 1931, in Caradja, Bull. Sect. sci. Acad. roum., 14: 74. Lectotype: ♂, Kwansien, China, B.M. slide no. 7613/Clarke, **syn. nov.**

*Sythropiodes choricopa*; Lvovsky, 1996: 650.

**Diagnosis.** Wingspan, 19~23mm. Based on the comparison of the male genitalia of *choricopa* Meyrick with those of a paralectotype of *S. approximans* Caradja (♂, Szetschan, Kwansien, Exp. Stotzmer in "Grigore Antipa" Museum, Bucharest, Rumania, gen prep. no. 4241/Park), the first author found that they are identical each other. Small difference in the shape of lobes on the costa of valva medially was found to be a intraspecific variation rather than interspecific difference (Figs 23, 24a). We propose to place *choricopa* Meyrick as a junior synonym of this species. This species also closely resemble *O. collega* Meyrick, 1927, which was described based on a female from Mt. Mokansan, China. The female genitalia of the holotype (Fig. 40a) is almost same as those of this species, except that the arms of signum are slightly longer as shown in the figure. The holotype is larger than this species. A further study is needed to clarify the taxonomic status of *O. collega* Meyrick.

**Male genitalia** (Figs 23-24, 24a). Male genitalia of a paralectotype, male, Kwansien, China, which is deposited in "Grigore Antipa" Museum, gen. slide no. 4241/Park, were illustrated in fig. 24, comparing with those of a Korean specimen, gen. slide no. 4117/Park (figs 23-24). See Clarke, 1955, pl. 229, figs 4a-b and also see Lvovsky, 1996, figs 7-8.

**Female genitalia** (Figs 42-42a). Signa compared with those of the holotype of *collega* Meyrick (fig. 43). See also Lvovsky, 1996, fig 9).

**Material examined.** [Korea]- 1 ♀, Mt. Myungji-san, Gyunggi Prov., 25. VI. 1977 (K.T. Park), 2 ♂, 1 ♀, same locality, 25. VI. 1983 (K.T. Park); 1 ♂, Chuncheon, Gangwon Prov., 3. VIII. 1983 (K.T. Park); 1 ♂, same locality, 23. VI. 1987 (K.T. Park); 1 ♂, Chuncheon, Gangwon Prov., 5. VII. 1993 (B.K. Byun), gen. slide no. 4116/Park; 2 ♂, 2 ♀, Seomyun, Yangyang, Gangwon Prov., 30. VI. 1987 (K.T. Park), gen. slide. no. 4117/Park; 2 ♀, Sogumgang, Gangwon Prov., 7. VII. 1988 (K.T. Park); 1 ♀, Mt. Palbong-san, Gangwon Prov., 5. VII. 1990 (D.S. Park); 1 ♂, Mt. Kwangdeug-san, Gyunggi Prov., 26. VI. 1994 (B.K. Byun); 1 ♀, Mt. Samag-san, Gangwon Prov., 19. VII. 1990 (K.T. Park), gen. slide no. 4160/Park; 1 ♀, Whenggye, Pyungchang, Gangwon Prov., 18. VII. 1984 (K.T. Park). [China]- 1 ♂, Mt. Jiulianshan, Jiangxi, 6. VII. 1975 (Liu); 1 ♀, same locality, 26. VI. 1975, Academia Sinica; 2 ♂, 1 ♀, Beijing, 13. VII. 1972, Academia Sinica. [Russian Far East]- 1 ♂, Gornotaezhnoe, 20 Km SE Ussuryisk, Primorye Territory, Russia, 1. VII. 1994 (M.G. Ponomarenko), gen. slide no. 4118/Park; 1 ♀, same locality, 8. VII. 1994 (M.G. Ponomarenko), gen. slide no. 4119/Park; same locality, 29. VI. 1994 (M.G. Ponomarenko); same locality, 17. VII. 1994 (M.G. Ponomarenko). Further specimens compared: The holotype of *O. collega* Meyrick; female, Mokansan, VI. 1919 "*Odites collega* Meyr. Type" handwritten by E. Meyrick, without label of collector; a paralectotype of *O. approximans* Caradja, male, Szetschwan, Kwansien Exp. Stotzmer, gen. slide no. 4241/Park, in the "Grigore Antipa" Museum.

*Distribution.* Korea (new record), China, Russian Far East.

***Scythropiodes hamatellus* Park & Wu, sp. nov.**

(Figs 5, 25-26, 46, 46a)

*Diagnosis.* The new species is superficially similar to *O. leucostola* Meyrick, but it can be separated from the latter by the followings: forewing more elongate, covered with fuscous scales throughout; 2nd segment of labial palpus dark brown outwardly, 3rd more slender. Male genitalic structures, especially in the shape of valva, differentiate this species from all the previously known species of the genus.

*Adult.* Wingspan, 17~18mm. Head appressed with shining, creamy white scales on frons, but more or less raised greyish orange scales beyond vertex; tegular pale brownish grey, speckling with dotlike dark-brown scales. Antenna with broad, large scape, without pecten; flagellum with dense cilia ventrally. Second segment of labial palpus stout with appressed scales, dark brown at basal 2/3 and orange white at apical 1/3 on outer surface and orange white on inner surface; 3rd segment as long as 2nd, with a black ring at base, orange white speckling with brown scales sparsely. Forewing ground colour creamy white, speckled with brown scales throughout; a small dark streak near base, a costal spot at middle, two distinct discal spots near middle and end of cell, another small dot posteriad cell and a large spot near tornus; a row of dark dots running along marginal line; apex rounded; termen oblique, not sinuate, with 5-6 brown dots along margin;  $R_4$  and  $R_5$  stalked beyond 3/4;  $R_5$  to termen;  $M_3$  close to  $M_2$  at base,  $CuA_1$  arising near angle and these 3 veins run almost parallel;  $CuA_2$  arising from 4/5 of cell. Hindwing grey; apex obtuse; termen heavily sinuate; cubital pecten not developed; a patch of hair-pencils at base of  $1A+2A$ ;  $M_3$  and  $CuA_1$  stalked at 1/3, and all other veins as same as the other member of this genus. Hind tibia and tarsus bearing white long hairs.

*Male genitalia* (Figs 25-26). Tegumen weakly developed, narrow. Gnathos sickle-shaped, long, pointed apically, dropped downwardly. Valva broad at basal half, almost trapezoidal; apical process hook-shaped, slender, slightly shorter than length of valva; saccus broadly developed along ventral margin, almost 1/3 width of valva. Transtilla narrow; lateral lobes large, conic, pointed apically, more or less triangular bearing numerous hairs. Juxta weakly sclerotized, trapezoidal, with two digitate lobes ventrally and other two shorter lobes dorsally. Saccus relatively long, round. Aedeagus longer than genitalia, about 1.3 times, narrowed beyond 3/4, apical part blunted, lacking cornutus, with two rows of wrinkled, membranous, long bands.

*Female genitalia* (Figs 46-46a). Apophyses anteriores about 1/4 of apophyses posteriores in length. Lamella postvaginalis fan-shaped, very large, heavily sclerotized, distal margin smoothly incurved; lamella antevaginalis with a heavily sclerotized plate laterally. Ductus bursae as long as corpus bursae; ductus seminalis wider, with minute spicules on inner surface medially, arising from conjunction. Corpus bursae large, long, with a pair of ovate signa, bearing numerous spines.

*Type.* Holotype: male, Ipori, Gangwon Prov., Korea, 20. VIII. 1990 (S.W. Cho), gen. slide no. 4114/Park. Paratypes: [**Korea**]- 1 ♀, Mt. Soyo-san, Gyunggi Prov., 3. XI. 1992 (K.T. Park), gen slide no. 4115/Park; 1 ♀, Suwon, Gyunggi Prov., 16. IX. 1976 (K.T. Park); 1 ♀, Gwangleung, Gyunggi Prov., 6. VII. 1989 (K.T. Park et B.K. Byun). [**China**]- ♂, Mt. Emei, Sichuan, 15. V. 1979 (J. Bai), gen.



slide no. Wu-88027; 1 ♀, 1 ♂, same locality, gen. slide no. Wu-88028 (♀), Wu-88033 (♂); 9 ♂, Mt. Qingcheng, Sichuan, 2-5. VI. 1979 (Y. Liu). Holotype and paratypes from Korea are housed in CIS, Korea, and other paratypes in IZAS, China.

*Distribution.* Korea, China.

*Remarks.* The signa of the Korean paratypes slightly differ from those of Chinese specimen (Fig. 46a): Chinese one is more elongated and densely spinous than those of Korean specimens. A further study is needed for their identity.

*Ethymology.* The specific name is derived from Latin word "hamatus", meaning hooked.

### ***Scythropiodes leucostola* (Meyrick, 1921)**

(Fig. 6)

*Prootobathra leucostola* Meyrick, 1921, Exot. Microlep., 2(14): 436; 1925: 259, pl. 5, fig. 107; Gaede, 1937: 556; Issiki, 1950: 463, fig. 1251; Inoue, 1954: 72; Clarke, 1955: 187; Okano, 1959: 269, pl. 179, fig. 15. (Type: male, Tokyo, Japan, July).

*Odites leucostola*: Clarke, 1955: 473, pl. 235, figs 2-2b; Okada, 1962: 30, figs 2, 7, 11, 17-18, 27-28, 37-38, 43, 47, 58-64, 76-77; 1962: 87; Moriuti, 1982, part 1: 273, part 2: 211, pl. 12: 19, 242: 15.

*Scythropiodes leucostola*: Lvovsky, 1996: 650.

*Male genitalia.* See Clarke 1955, pl. 235, figs 2a-b.

*Distribution.* Korea, Japan.

*Hosts.* Following host plants have been known from Japan: *Abies firma* S. et Z., *Malus pumila* Miller var. *dulcissima* Koidzumi, *Acer* spp., *Shiia* spp., *Quercus* spp., *Celtis sinensis pers* var. *japonica* Nakai, *Zelkova serrata* Makino, *Ulmus* spp., *Acacia* sp., *Acschynomence* sp., *Elaeagnus* spp., *Acanthopanax spinosum* (Linne) Miquel, *Peucedanum decurvum* Maximowicz (Okada, 1962).

*Remarks.* The species was known from Korea in the previous literatures, but no specimen has been found in Korea. The species is one of the common species in Japan. There is a big possibility of its distribution in the Korean peninsula, considering its known distributional range.

### ***Scythropiodes jiulianae* Park & Wu, sp. nov.**

(Figs 8, 27-28, 44)

*Diagnosis.* This new species superficially resembles the preceding new species, *hamatellus* sp. nov., but can be distinguished by the creamy white vertex and forewing's ground colour. It is easily separable from the latter by the male genitalic character.

*Adult.* Wingspan 16~17mm. Head frons and vertex with creamy white. Antenna with long, creamy white scape; flagellum yellowish brown except basal 6-8 segments. Labial palpus yellowish brown at basal half and creamy white obliquely beyond half on outer surface, creamy white speckling yellowish brown scales at basal half on inner surface; 3rd segment shorter than 2nd, with yellowish brown ring at base, creamy white before 2/3 and speckled with yellowish brown scales sparsely. Forewing ground colour creamy white, speckled yellowish-brown scales irregular; inner discal spot at middle and outer large one

at end;  $R_4$  and  $R_5$  stalked beyond middle;  $R_5$  to apex;  $M_3$  close to  $M_2$  at base,  $CuA_2$  arising from 4/5 of cell. Hindwing grey.

*Male genitalia* (Figs 27-28). Gnathos narrow and long, apex sharply acuted. Valva semitriangular, extremely broadened towards base, pointed apically, with heavily sclerotized sharply pointed process at base. Transtilla well developed, with a pair of broad lateral processes which pointed apically and incurved medially on outer margin. Juxta quadrate. Vinculum narrow. Aedeagus long, with two large thornlike cornuti apically.

*Female genitalia* (Fig. 44). Closely related to that of *approximans* Caradja. Antrum heavily sclerotized, distal half broadened, caudal margin rounded; genital plate sclerotized, caudal margin emarginated medially. Ductus bursae rather short; ductus seminalis narrow, with numerous minute spicules on inner surface. Corpus lursae ovate, with a pair of large signa; signa radiated with 10 arms.

*Type*. Holotype: male, Dayu County, Jiangxi, 14. VI. 1977, gen. slide no. Wu-88029. Paratypes: 1 ♂, 5 ♀, same locality as holotype, 16. VI. 1977, gen. slide no. Wu-88042; 1 ♂, 1 ♀, Mt. Jiulianshan, Jiangxi, 22-24. V. 1977, gen. slide no. Wu-88044 (♀), Wu-88045 (♂); 4 ♂, Mt. Emei, Sichuan, 12. VI. 1979, gen. slide no. Wu-88085, and 22. VII. 1981, Academia Sinica. A male paratype is housed in CIS, Korea, and all others housed in IZAS, China.

*Distribution*. China.

*Ethymology*. The name is derived from the collecting site, Mt. Jiulian.

### ***Scythropiodes velipotens* (Meyrick)**

(Figs 9, 29-30, 48, 48a)

*Odites velipotens* Meyrick, 1935, Exot. Microlep., 4: 572; Clarke, 1955 (2): 482, pl. 240, figs 2-2c. Type: male, Mt. Omei, 4,000 feet, W. China, July (Frank), slide no. 7615/Clarke, **comb. nov.**

*Diagnosis*. This new species closely resembles the preceding new species. No difference is observed superficially, but it can be distinguished by the larger size and genitalic character. Wingspan 20~21 mm. Head white. Antennae with flagellum densely ciliated beneath in male. Second segment of labial palpus creamy white at apical 1/3 and brown at basal 2/3 on outer surface, creamy white speckled with brown scales ventrobasally on inner surface; 3rd with dark brown ring at base. Forewing ground color creamy white, with fine brown scales scattered evenly;  $R_4$  and  $R_5$  stalked beyond middle,  $R_5$  to termen. Hindwing grey.

*Male genitalia* (Figs 29-30). Gnathos narrow and long; apex acute. Valva elliptical, with short acute process apically; basal process rodlike, extremely long, about 3/4 length of valva; sacculus broadly developed. Transtilla with long, digitate lateral lobes, slightly shorter than basal processes of valva. Aedeagus simple, with a long needlelike cornutus.

*Female genitalia* (Figs 48-48a). Lamella postvaginalis large, heavily sclerotized, with conversed Y-shape medially. Ductus bursae broadly expanded from 1/5 to 3/5, forming a sac; ductus seminalis arising from 4/5 of ductus bursae, with minute spicules on inner surface. Corpus bursae ovate, with minute spicules on inner surface; signa consist of two large, pyriform plates with numerous denticles.

*Material examined.* [China]- 1 ♂, Mt. Emei, Sichuan, 15. VI. 1979, Academia Sinica; 2 ♂, same locality, 15 & 18. VI. 1979, Academia Sinica; 1 ♀, Sichuan, 27. VII. 1981, Academia Sinica, gen. slide no. 4540/Park.

*Distribution.* China.

***Scythropiodes tribula* (Wu, 1997)**

(Figs 10, 31-32, 49, 49a)

*Odites tribula* Wu, 1997, Ins. Three Gorge Res. Area Yangze River, 1060p, figs 1a-c.

*Diagnosis.* This species closely resembles the preceding species: *approximans* Caradja, *leucostola* Meyrick, *hamatellus* sp. nov., *jiulianae* sp. nov., and *velipotens* Meyrick. They are hardly distinguishable by the superficial characters. Wingspan 17mm. Head and thorax creamy white. Forewing creamy white in basal half, and scattered with yellowish-brown scales beyond half; two distinct brown discal spots at middle and end; four dark brown spots from near middle along costa; subterminal line consists of indistinct brown spots; a row of distinct spots along termen; cilia with a brownish row of spots at middle. Hindwing grey.

*Male genitalia* (Figs 31-32). Gnathos sickle-shaped; apex not very acute. Valva with a short apical process; costa strongly emarginated beyond middle with a small rounded lobe on frontal margin; sacculus broadly developed. Transtilla with digitate, long lobes. Juxta quadrate, anterior margin incurved; a pair of ventral and dorsal lobes, ventral lobes small, digitate, and dorsal ones more heavily sclerotized, as long as ventral ones. Saccus more or less acute anteriorly. Aedeagus similar to that of *approximans* Caradja in shape, with 3 long, strong cornuti.

*Female genitalia* (Figs 49-49a). Ductus bursae broadened beyond 1/4 and then narrowed, coiled; inner surface of coiled part with minute spicules. Corpus bursae spherical, with a pair of signa; signa ovate, heavily sclerotized with numerous short, spinelike denticles on ventral surface.

*Material examined.* [China]- 1 ♂, Mt. Qingcheng, Sichuan, 21. VI. 1980 (J. Bai); 4 ♂, 7 ♀, Mt. Emei, Sichuan; 7 ♀, Mt. Qingcheng, Sichuan, 12-18. VII. 1980 (J. Bai); 1 ♂, Xingshan County, Hubei, 20. VI. 1993 (J. Yao).

*Distribution.* China.

***Scythropiodes barbellatus* Park & Wu, sp. nov.**

(Figs 11, 33-34)

*Diagnosis.* This species is larger than *S. gnophus* sp. nov., but it is not easy to distinguish from the latter in appearance. It can be only distinguished by the shape of valva in the male genitalia.

*Adult.* Wingspan, 13~15mm. Head creamy white on frons and anterior part of vertex, light brown beyond vertex. Thorax and tegula light brown. Antenna creamy white on scape and on basal 1/4, yellowish brown beyond it. Second segment of labial palpus greyish brown except in apical 1/4 on outer surface; 3rd as long as 2nd, yellowish white on upper surface and dark brown on anteroventral surface.

Forewing brown to dark brown evenly, yellowish white along costal margin; termen oblique; cilia yellowish white and dark brown around tornus. Hinwing grey; cilia yellowish white. Hind tibia with shiny orange-white long hairs above.

*Male genitalia* (Figs 33-34). Gnathos with well developed basal stalk; medioapical part short and small, with acute apex. Valva with a long digitate process arising from costal 3/4 and long bristlelike hairs along costa on apical portion; basal process small, triangular bearing hairs. Transtilla weakly sclerotized, wide, convex medially; lateral processes broadened with secondary free lobes ventrally. Juxta trapezoidal, more or less elongate vertically; with lateral digitate processes at caudal 2/3 ventrally. Aedeagus slender, with two bundles of brushlike spines.

*Type*. Holotype: male, Mt. Jiulian, Jiangxi, China, 20. V. 1977 (J. Bai), gen. slide no, 4516/Park. Paratypes: 1 ♂, Mt. Wuyi, Fujian, China, 30. VI. 1982 (S. Qi), gen. slide no. Wu-94025; 2 ♂, Mt. Huangshan, Anhui, China, 19. VII. 1977 (J. Huang et al.). Holotype and two paratypes are housed in IZAS, China, and a paratype in CIS, Korea.

*Distribution*. China.

*Ethymology*. The name is derived from Latin "barbellate", meaning spinose, in the apical part of valva.

### ***Scythropiodes gnophus* Park & Wu, sp. nov.**

(Figs 12, 35, 36, 47, 47a)

*Diagnosis*. This new species closely resembles the preceding new species, *S. barbellatus* sp. nov. It is hardly distinguishable from the latter in the external character, except by its smaller size, but it can be separated by the different shape of the male genitalia, especially in the shape of the valva and juxta.

*Adult*. Wingspan, 12~13mm. Head creamy white on frons and anterior part of vertex, light brown beyond vertex. Thorax and tegula brown. Antenna creamy white on scape and on basal 1/4 anterio-dorsally, yellowish brown beyond it; not ciliated ventrally. Labial palpus more slender than that of *barbellatus*; 3rd segment slightly longer than 2nd. Forewing more or less dark brown evenly, covered with pale orange scales along cpstal margin, apex more or less acute; termen oblique; cilia long, yellowish white on termen, dark brown near tornus. Hinwing grey; cilia yellowish white. Hind tibia with shiny pale orange hairs above. The external character is hardly distinguishable from the preceding species, except its smaller size.

*Male genitalia* (Figs 35-36). Gnathos with strong basal stalk; medioapical process short and small, with acute apex. Valva bifurcated into two long lobes near apical 1/4, ventral lobe extended from sacculus, with more or less capitate apex, and costal lobe as long as ventral one. Transtilla membranous, lack lateral lobes. Juxta forming an inverted triangle, with short, digitate dorsolateral lobes. Aedeagus as long as whole length of genitalia, without counutus.

*Female genitalia* (Figs 47-47a). Ductrus bursae narrow and very long, 4x as long as corpus bursae. Corpus bursae with a pair of signa; Signa pyriform, heavily sclerotized, with more than spinelike denticles on surface.

*Type*. Holotype: male, Mt Emei, Sichuan, China, 18. VII. 1980 (J. Bai). Paratypes: 1 ♂, 6 ♀, same locality as holotype, 11-20. VII. 1980, gen. slide no. Wu-94002 (♂), Wu-88049 (♂), Wu-88048 (♀).

A male paratype is housed in CIS, Korea, and all others in IZAS, China.

*Distribution.* China.

*Ethymology.* The name is derived from Greek, "gnopos", meaning darkness or dust, due to the dark ground colour of the forewing.

***Scythropiodes triangulus* Park & Wu, sp. nov.**

(Figs 13, 37-38, 50)

*Diagnosis.* This species is close to *Myriopleura psilotis* Meyrick, 1905 (Journ. Bombay Nat. Hist. Soc., 16: 602: Type; male, Peradeniya, Ceylon, Green, 11. 01, gen. slide no. 7622/Clarke), but it is much larger than the latter. In the male genitalia, lobes of juxta and transtilla are longer and larger than those of *psilotis* Meyrick.

*Adult.* Wingspan, 23 mm. Head covered with rough yellowish white scales. Tegula and thorax pale yellow. Antenna yellowish white on scape and on basal 1/6, yellowish brown beyond it; flagellum lacks hairs ventrally. Labial palpus yellowish white. Forewing ground colour pale yellow; small discal cells near base, at 1/3 and near end; scattered with brown scales sparsely beyond outer 1/3; costa arched before middle; 6-8 brown spots between veins from before apex to termen along termen, these spots more clear on under surface;  $R_4$  and  $R_5$  stalked before middle;  $R_5$  to termen;  $M_2$  parallel to  $M_1$  and close to  $M_3$  at base,  $CuA_2$  arising from near lower corner. Hindwing yellowish white; termen strongly sinuate beyond  $M_2$ .

*Male genitalia* (Figs 37-38). Tegumen more or less elongated. Gnathos with heavily sclerotized medioapical process, as long as its basal arm; apex acuted. Valva narrowed towards apex, densely setosed beyond 3/4; apex obtuse; basal process long, about 3/4 of valva in length, with acute apex. Lobes of transtilla digitate, stout. Juxta trapezoidal, with heavily sclerotized, sickle-shaped lateral lobes distally. Aedeagus strongly bent near middle, with a bundle of minute spicules extending to half length of aedeagus.

*Female genitalia* (Fig. 50). Apophyses anteriores about 1/3 of apophyses posteriores. Lamella antevaginalis forming a elongated plate. Antrum moderate, weakly sclerotized. Signa consists of two different length of plates, bearing denticles densely, shorter one about 1/2 length of longer one.

*Type.* Holotype: male, Mt. Jianfengling, Hainan, China, 6. X. 1983 (Liu coll.), gen. slide no. Wu-88067. Paratypes: 1 ♀, same locality as holotype, 12. XI. 1978; 2 ♂, 2 ♀, Fuzhou City, Fujian China., 5-13. VI. 1984; 1 ♂, Yangcun, Guangdong, China, XI. 1978; 1 ♂, Xianquo County, Jiangxi, China, 7. VI. 1979. All types are housed in IZAS, China.

*Distribution.* China.

*Remarks.* The genus *Myriopleura* was treated as a synonym of *Odites* by Clarke (1955), but it should be transferred to the genus *Scythropiodes*.

*Ethymology.* The species name is derived from Latin word "curvus", meaning bent.

***Scythropiodes issikii* (Takahashi, 1930)**

(Figs 14, 39-40, 51)

*Depressaria issikii* Takahashi, 1930, *Kaju gaityu kakuron*, 1: 285, figs 140-141. Type: Japan.*Psecadia (Ethmia) issikii* (Takahashi), Matsumura, 1931: 1084, fig. 2216. Type: Japan.*Odites plocamopa* Meyrick, 1935: 84; Clarke, 1955: 478, pl. 238, fig. 1-1b. Type: Tokyo, Japan, **syn. nov.***Odites perissopsis* Meyrick, 1936: 27; Inoue, 1954: 64; Clarke, 1955: 477, pl. 237, figs 4-4b; Issiki, 1957: 50, pl. 7, fig. 213. Type: Tienmushan, China.*Odites issikii*; Saito, 1961: 51-56, pls. 7-8, figs 1-20; Okada, 1962: 86, pl. 10, figs 23-26; pl. 11, figs 41-42; Moriuti, 1982, part 1: 273, part 2: 211, pl. 12: 8.*Scythropiodes issikii*: Lvovsky, 1996: 650.

**Diagnosis.** Wingspan, 14~19 mm. The holotype of *plocamopa* Meyrick (male, gen. slide. no. 7621/Clarke) is in extremely bad condition with damaged antennae and labial palpi. The male genitalia of the holotype looks slightly different from that of *perissopsis* Meyrick (gen. slide. no. 7609/Clarke), which was described from China based on a male, but those difference are probably due to the different view of the genitalia during the process of the dissection, especially in the basal process at the base of costa of valva. Thus, We propose that *plocamopa* Meyrick is a junior synonym of *issikii* (Takahashi).

**Male genitalia** (Figs 39-40). See Okada, 1962, figs 23-26.

**Female genitalia** (Fig. 51). See Okada, 1962, figs 41-42.

**Material examined.** [**S. Korea**]- 1 ♂, Sogumgang, near Yangyang, Gangwon Prov., 8. VIII. 1988 (K.T. Park); 1 ♂, Chuncheon, Gangwon Prov., 21. VII. 1992 (K.T. Park et B.K. Byun), gen. slide no. 4164/Park; 1 ♀ Mt. Jeombong-san, Gangwon Prov., 10. VIII. 1992 (K.T. Park); 1 ♂, Mt. Samag-san, near Chuncheon, 19. VII. 1989 (K.T. Park), gen slide no. 4165/Park; 2 ♂, Gylumri, Jeongson, Gangwon Prov., 23. VII. 1996 (J.S. Lee); 1 ♀, Andong, Gyungbug Prov., 10. VIII. 1988 (K.S. Lee); 1 ♀, Mt. Sokri-san, Chungbug Prov., 19. VIII. 1993 (K.T. Park et B.K. Byun), gen. slide no. 4166/Park; 1 ♀, Muju, Jeonbug Prov., 13. VIII. 1975 (K.T. Park); 1 ♂, Mt. Pekun-san, Jeonnam Prov., 17. VIII. 1995 (K.T. Park); 1 ♂, Mt. Halla-san, Jeju Prov., 5. VII. 1986 (M.K. Ko). [**N. Korea**]- 1 ♂, "Prov. North Pyungan, Mt. Myohyang-san, Hotel Myohyang-san" "17. o7. 1982 no. 821. leg. Forro & Ronkay, "Odites plocamopa Meyr. det. Lvovsky, 1982" "gen. slide. no. 3137/Lvovsky", in HMNH. [**China**]- 1 ♂, Mt. Wuyu, Fujian, 9. X. 1980; 1 ♀, same locality, 17. VI. 1981; 1 ♂, Mt. Hengshan, Hunan, 15. VIII. 1979; 3 ♂, Xianchen County, Anhui, 1. VIII. 1979, 7. V. 1979, and 9. IX. 1979; 1 ♂, 1 ♀, Shijiazhuang, Hebei, ? VI. 1980; 3 ♂, Beijing, ? VI. 1980 and 20. VII. 1984; 1 ♀, Pingxiang City, Guangxi, 12. VI. 1976; 1 ♂, Lianghe County, Yunan, 19. V. 1982; 5 ♂, Mt. Emei, Sichuan, 10-25. VII. 1980.

**Distribution.** Japan, Korea, China (South and Manchuria).

**Hosts.** Following species were known from Japan: *Gardenis jasminioides* Ellis forma *grandiflora* Makino, *Malus pumila* Miller, *Pyrus simonii* Carriere, *Populus nigra* Linne, var. *italica* (Munch) Koehne, *Prunus* spp., *Salix* spp., *Smilax china* Linne, *Ulmus pavifolia* Jacquin, *Viburnum awabuki* K. Koch, and *Weigela coreaensis* Thunberg (Okada, 1962).

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中國과 韓國産 *Scythropiodes*屬 (Lepidoptera, Lecithoceridae)의  
분류학적 정리  
— 7新種 발표 —

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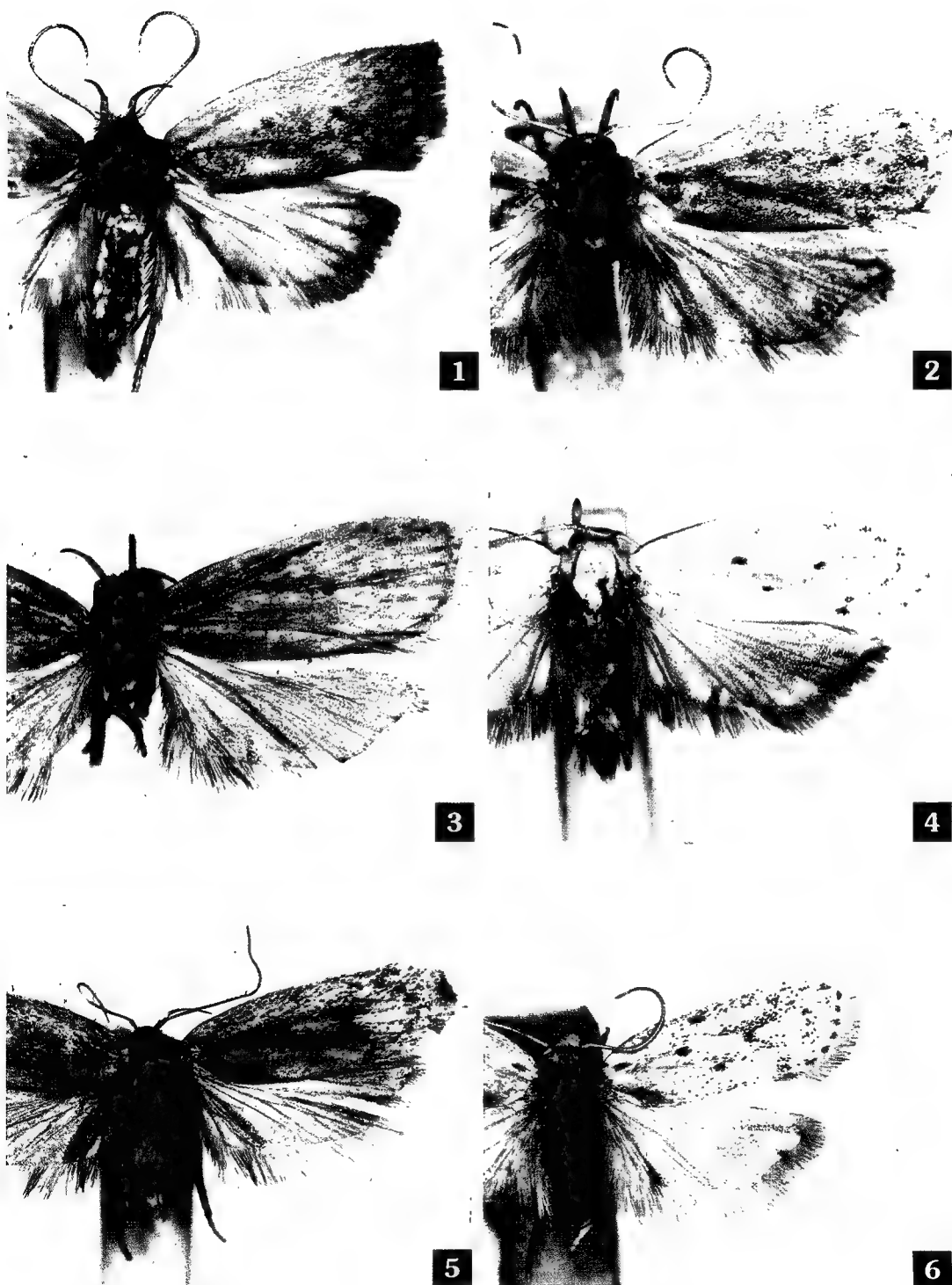
*Scythropiodes* 屬은 종전까지 *Odites* 屬의 synonym으로 처리되어왔던 屬으로 우리나라에서는 3種이 보고되어 왔었다. 금번 연구결과로 한국으로부터 *S. hamatellus* sp. nov.을 新種으로 기재하고, 중국으로부터 *S. oncinus* sp. nov., *S. elasmatus* sp. nov., *S. jiulianae* sp. nov., *S. barbellatus* sp. nov., *S. gnophus* sp. nov., 그리고 *S. triangulus* sp. nov. 등 6種을 新種으로 기재 발표한다. 그리고 *xenophaea* Meyrick은 *malivora* (Meyrick)로, *choricopa* Meyrick은 *approximans* (Caradja)로 그 학명을 수정하며, *S. ussuriella* Lovovsky와 *S. issikii* (Takahashi)를 우리나라 미기록종으로 확인하였다. 또한 *malivora* (Meyrick) 유충의 기주식물로 밤나무와 배롱나무가 우리나라에서 확인되었다. 결과적으로 중국과 우리나라에 분포하는 *Scythropiodes* 屬은 14種으로 확인되었으며, 이들 種에 대한 검색표와 성충 암·수생식기를 도해하였다.

검색어 : 분류, 나비목, 뿔나방상과, Lecithoceridae, *Scythropiodes*, *Odites*, 신종

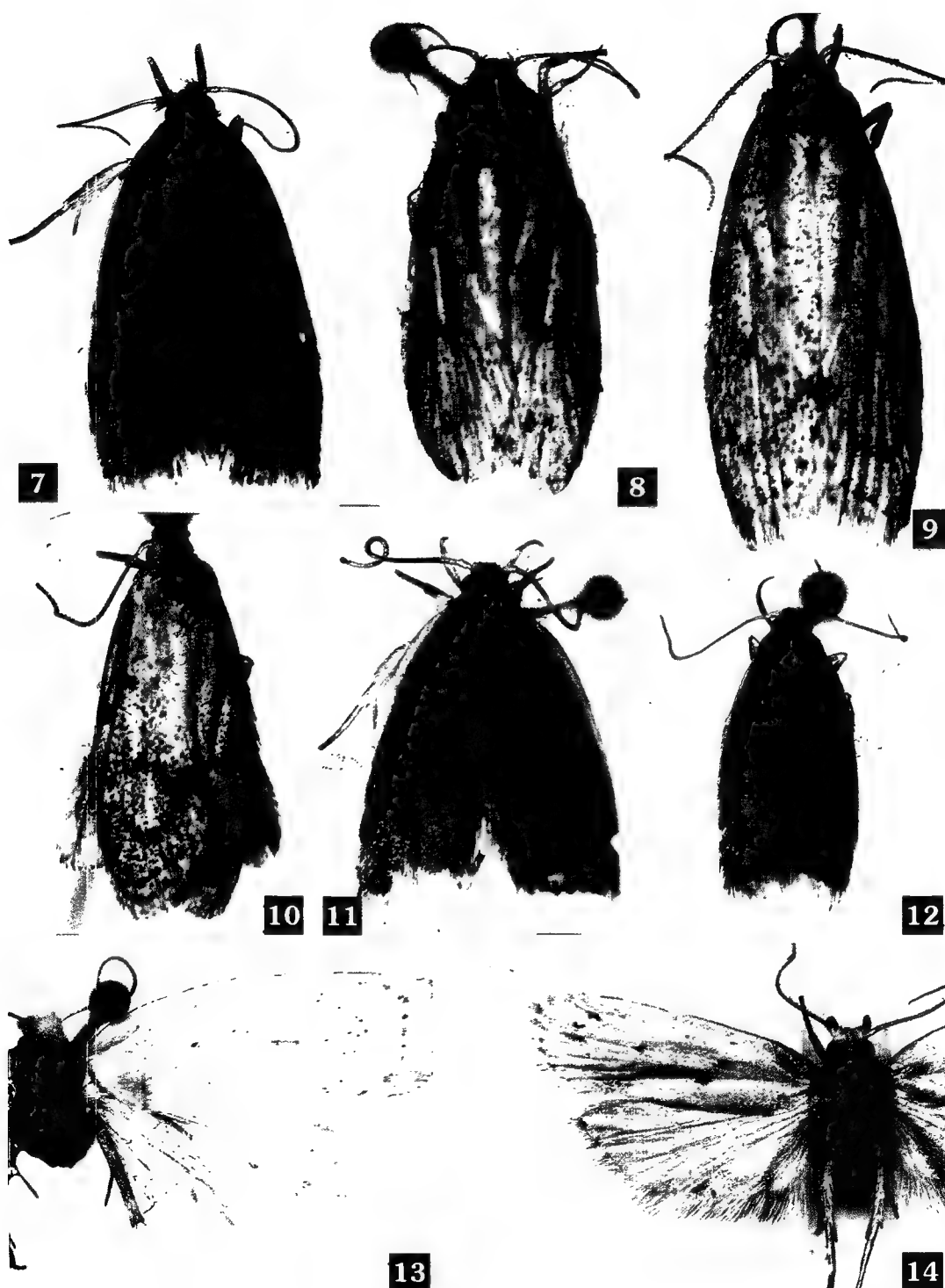
(Received: 10 Aug. 1997)

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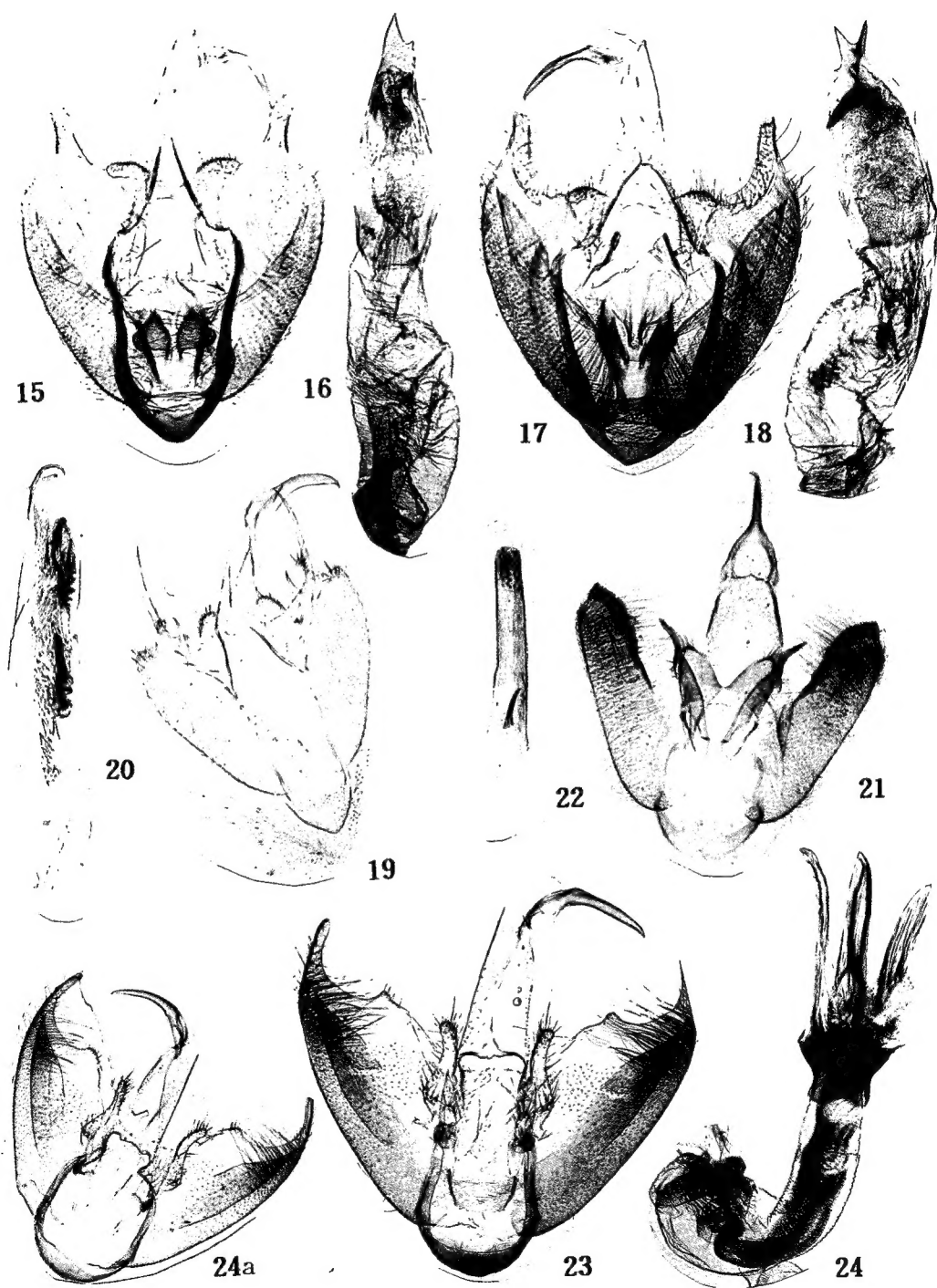




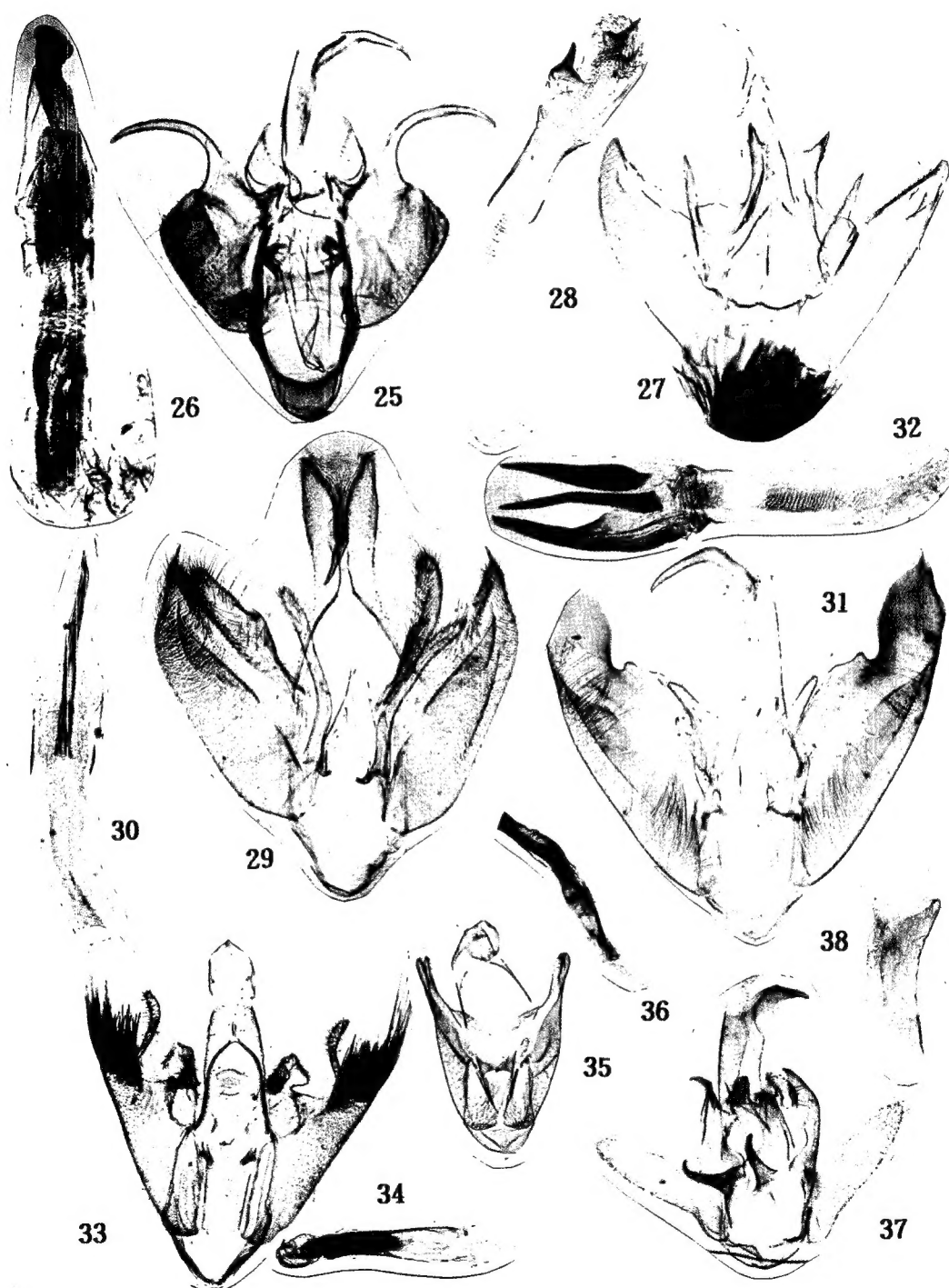
**Figs 1-6.** Adults: 1. *Scythropiodes malivora* (Meyrick); 2. *S. ussuriella* Lvovsky; 3. *S. elasmatus* sp. nov.; 4. *S. approximans* Caradja; 5. *S. hamatellus* sp. nov.; 6. *S. leucostola* (Meyrick)



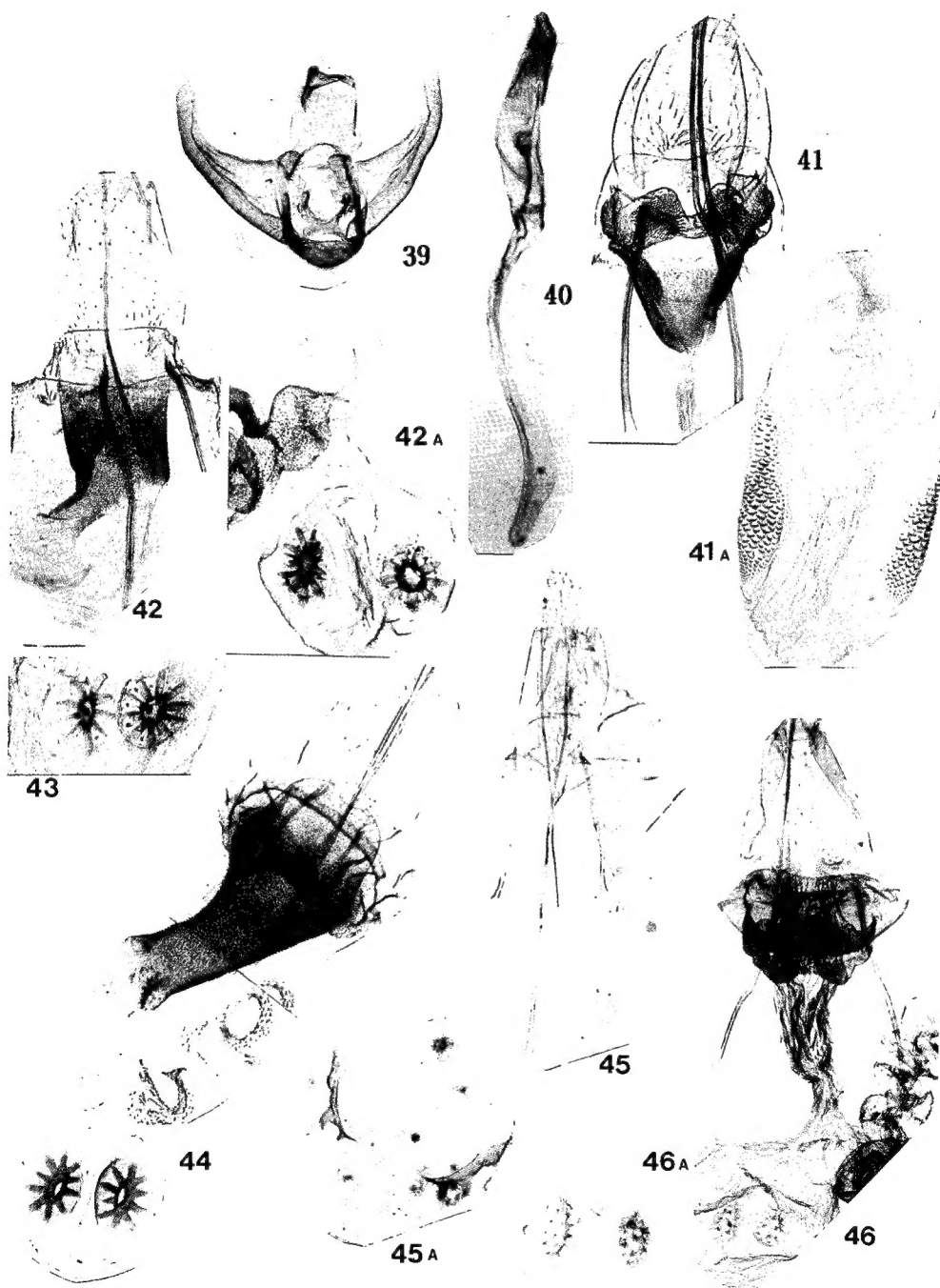
**Figs 7-14.** Adults: 7. *S. oncinius* sp. nov.; 8. *S. julianae* sp. nov.; 9. *S. velipotens* (Meyrick); 10. *S. tribula* Wu; 11. *S. barbellatus* sp. nov.; 12. *S. gnophus* sp. nov.; 13. *S. triangulus* sp. nov. 14. *S. issikii* (Takahashi)



**Figs 15-24.** Male genitalia: 15. *Scythropiodes malivora* (Meyrick); 16. Ditto, aedeagus; 17. *S. ussuriella* Lvovsky; 18. Ditto, aedeagus; 19. *S. oncinus* sp. nov.; 20. Ditto, aedeagus; 21. *S. elasmatus* sp. nov.; 22. Ditto, aedeagus; 23. *S. approximans* Caradja of Korean specimen; 24. Ditto, aedeagus 24a. Paralectotype of *approximans* Caradja, gen. slide no. 4241/Park, in "Grigore Antipa" Museum (85% scale-down).

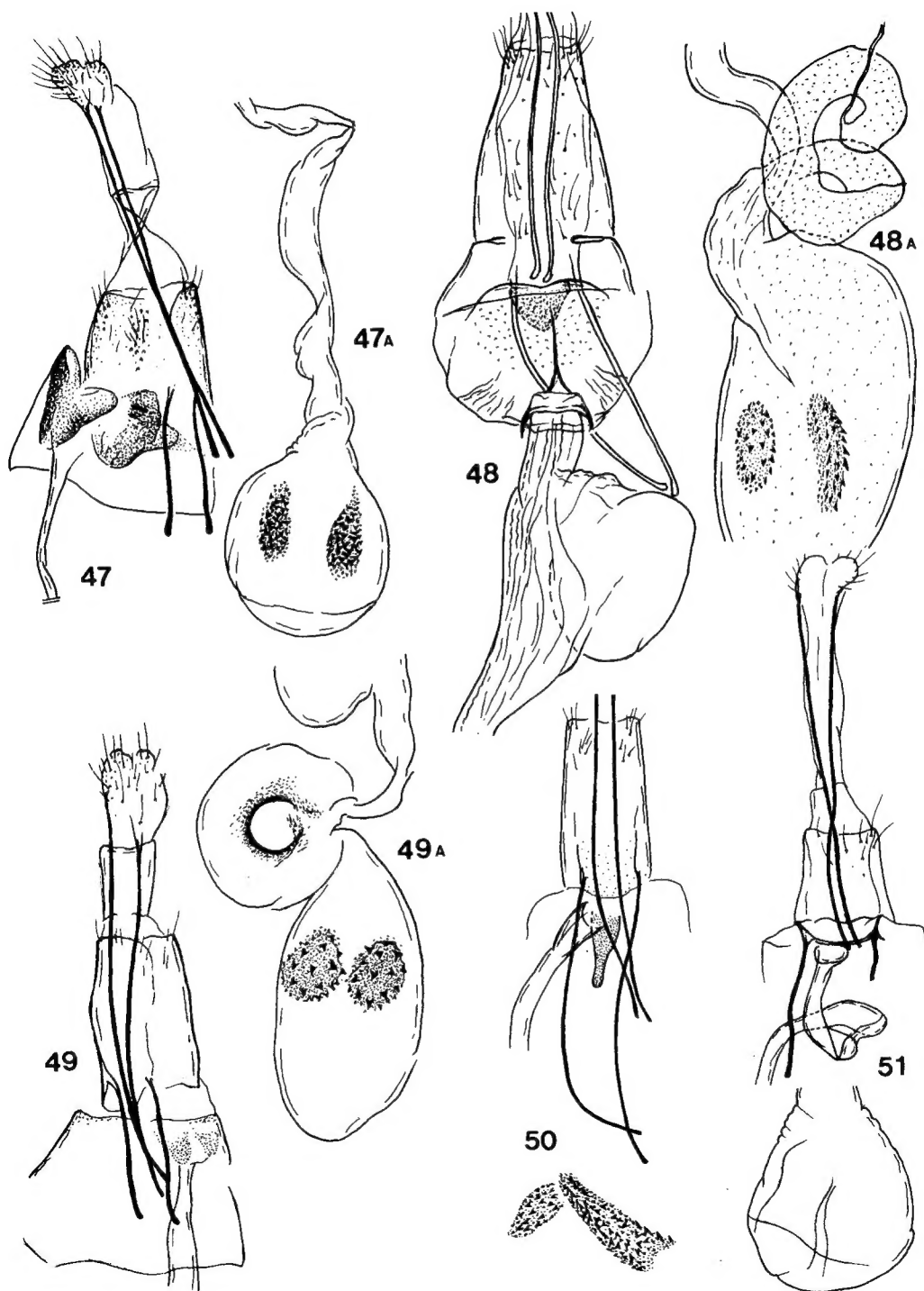


**Figs 25-38.** Male genitalia: 25. *S. hamatellus* sp. nov.; 26. Ditto, aedeagus; 27. *S. jiulianae* sp. nov.; 28. Ditto, aedeagus; 29. *S. velipotens* (Meyrick); 30. Ditto, aedeagus; 31. *S. tribula* Wu; 32. Ditto, aedeagus; 33. *S. barbellatus* sp. nov.; 34. Ditto, aedeagus; 35. *S. gnophus* sp. nov.; 36. Ditto, aedeagus; 37. *S. triangulus* sp. nov.; 38. Ditto, aedeagus.



**Figs 39-40.** Male genitalia: 39. *S. issikii* (Takahashi); 40. Ditto, aedeagus.

**Figs 41-46.** Female genitalia: 41. *Scythropiodes malivora* (Meyrick), with corpus bursae (41a); 42. *S. approximans* Caradja, with corpus bursae (42a); 43. Signa of the female genitalia of *collega* Meyrick (holotype, gen. slide no. 4240/Park, in "Grigore Antipa" Museum); 44. *S. julianae* sp. nov.; 45. *S. oncinus* sp. nov, with corpus bursae (45a); 46. *S. hamatellus* sp. nov.; 46a. Signa of Chinese specimen (Mt. Emei, Jiangxi, gen. slide no. W-88028)



**Figs 47-51.** Female genitalia: 47. *S. gnophus* sp. nov., with ductus bursae and corpus bursae; 48. *S. velipotens* (Meyrick), with ductus bursae and corpus bursae (48a); 49. *S. tribula* (Wu), with ductus bursae and corpus bursae (49a); 50. *S. triangulus* sp. nov. with signa; 51. *S. issikii* (Takahashi).